



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/006,763 01/14/98 KENMOCHI Y 712-017

JAMES V COSTIGAN
HEDMAN GIBSON & COSTIGAN
1185 AVENUE OF THE AMERICAS
NEW YORK NY 10036-2646

MM42/0803

EXAMINER

SAWHNEY, H

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 08/03/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/006,763

Applicant(s)

Kenmochi

Examiner

Ismael Negron

Group Art Unit

2875



☒ Responsive to communication(s) filed on Feb 18, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-10 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1 and 3-10 is/are rejected.

☒ Claim(s) 2 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2875

DETAILED ACTION

Abstract

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. **It should avoid using phrases which can be implied**, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the heading "Abstrunct" is not a proper heading for the abstract of the disclosure, see MPEP § 608.01(b). It should read "**Abstract**". Correction is required.

Title

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Illuminated Keypad Key and Method of Manufacture Thereof.**

Art Unit: 2875

Drawings

4. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "2A" has been used to designate both **brim portion** and **colored translucent resin keytop**. Also note the following:

- reference character "5" has been used to designate both **transparent protective membrane** and **protection layer**;
- reference character "1B" has been used to designate both **non-operating portion** and **key operating portion**; and
- reference character "10" has been used to designate both **cavity** and **cavity portion**.

Correction is required.

Claim Objections

6. The claims in this application do not commence on a separate sheet in accordance with 37 CFR 1.52(b). Appropriate correction is required in response to this action.

7. Claims 5 and 6 are objected to because of the following informalities: incorrect form of the verb **cover**. "Covered" in line 8 of claim 5 and, line 7 of claim 6, should read --covering--.

Appropriate correction is required.

Art Unit: 2875

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4- 6 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "**transparent keytop resin**" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "**transparent resin keytop**" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "**pattern formed portion**" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "**key operating portion**" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "**key operating portion**" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "**fitting portions**" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Correction is required.

Art Unit: 2875

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 4, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Inagaki et al..

Inagaki et al. discloses a method of manufacturing a keytop for push-button switches, having the following steps:

- **setting a film having a pattern formed in one side, inside a mold,**
column 4 and 5, lines 62-67 and 1-9, respectively;
- **injecting a light permeable resin material into the mold to form a**
keytop, column 5, lines 21-34;
- **fixing a film having a pattern to the upper and side surfaces of the**
transparent keytop resin, column 5, lines 35-39; and
- **fixing the upper surface of the key operating portion to the underside**
of the keytop by means of a transparent adhesive, column 5 and 6, lines
66-67 and 1-10, respectively.

Art Unit: 2875

Inagaki et al. further discloses a keytop for push-button switches, having:

- **a key operating portion made of transparent rubber or a thermoplastic elastomer, Figure 1, reference number 23;**
- **a transparent keytop mounted and bonded to the top of the key operating portion, Figure 1, reference number 50;**
- **an operating shaft formed on a central portion of the underside of the key top, Figure 1, reference number 51;**
- **a cavity formed on the underside of the keytop, Figure 1, cavity inside portion designated by reference number 51; and**
- **the transparent resin keytop being formed from a hard foaming resin such as polyurethane foam or the like, column 4 and 6, lines 63-66 and 35-39, respectively.**

10. Claims 5 and 6 rejected under 35 U.S.C. 102(b) as being anticipated by Takii et al..

Takii et al. also discloses an illumination type keytop having:

- **a colored partial transmission type light reflecting membrane formed on an upper surface of a transparent resin keytop, Figure 1, reference number 16;**
- **a pattern formed on the upper surface of the partial transmission type light reflecting membrane, Figure 2;**

Art Unit: 2875

- **an opaque layer covering the upper and side surfaces of the keytop, ;**
- **a transparent protection layer formed on the upper and side surfaces of the opaque layer, column 1, lines 36-37; and**
- **an upper surface of the key operating portion being fixed to the underside of the key top by means of a transparent adhesive, Figure 1, reference number 12.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takii et al. in view of Kenmochi.

Takii et al. discloses an illumination type keytop having:

- **a light permeable resin keytop, Figure 1, reference number 10;**
- **a film having a pattern formed in one side, Figure 1, reference numbers 15 and 16;**

Art Unit: 2875

- **the film being fixed to the upper and side surfaces of the transparent resin key top, Figure 1; and**
- **a pattern being formed in the upper or bottom surface of the keytop film, Figure 1, reference number 16.**

The illumination type keytop of Takii et al. does not have:

- **an upper surface of a key operating portion made from transparent rubber or thermoplastic elastomer; and**
- **the upper surface of a key operating portion being fixed to the underside of the light permeable resin key top by means of a transparent adhesive.**

Kenmochi discloses an illuminated button key having:

- **an upper surface of a key operating portion made from transparent rubber or thermoplastic elastomer, Figure 1, reference number 1B; and**
- **the upper surface of a key operating portion being fixed to the underside of a light permeable resin key top by means of a transparent adhesive, Figure 1, reference number 6.**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the illumination type keytop of Takii et al. as the keytop of the illuminated button key of Kenmochi to eliminate the occurrence of window reflection to ensure that the marking on

Art Unit: 2875

the keytop are clearly discriminated, even in dark conditions. See Kenmochi column 3, lines 27-52.

12. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inagaki et al. in view of Norris.

Inagaki et al. further discloses a keytop for push-button switches, having:

- **a key operating portion made of transparent rubber or a thermoplastic elastomer, Figure 1, reference number 23;**
- **a transparent keytop mounted and bonded to the top of the key operating portion, Figure 1, reference number 50;**
- **an operating shaft formed on a central portion of the underside of the key top, Figure 1, reference number 51;**
- **a cavity formed on the underside of the keytop, Figure 1, cavity inside portion designated by reference number 51; and**
- **the transparent resin keytop being formed from a hard foaming resin such as polyurethane foam or the like, column 4 and 6, lines 63-66 and 35-39, respectively.**

The keytop for push-button of Inagaki et al. does not have:

- **a lower portion of the operating shaft of the transparent resin keytop fitted into a concave portion formed in a central portion of the upper surface of the transparent rubber key operating portion;**

Art Unit: 2875

- **the fitted portions being bonded by means of a transparent adhesive;**
and
- **the operating shaft being fitted into an insertion hole and bonded in place by means of a transparent adhesive.**

Norris discloses a snap action membrane switch having:

- **a lower portion of the operating shaft of the transparent resin keytop fitted into a concave portion formed in a central portion of the upper surface of the transparent rubber key operating portion, Figure 3;**
- **the operating shaft being fitted into an insertion hole, Figure 3,**
reference number 56 .

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the operating shaft of Norris in the operating portion of the keytop for push-button of Inagaki et al. So that the operating shaft would be would not produce a tactile feedback that would falsely indicate that the switch is in the closed state, as per the teachings of Norris, column 1, lines 38-42.

Art Unit: 2875

Allowable Subject Matter

13. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Applicant discloses a keytop having:

- **a light permeable resin keytop;**
- **a film having a pattern formed in one side;**
- **the film being fixed to the upper and side surfaces of the transparent resin key top;**
- **cutting away portions of the film that extend beyond the lower periphery of the keytop;**
- **an upper surface of a key operating portion made from transparent rubber or thermoplastic elastomer;**
- **the upper surface of a key operating portion being fixed to the underside of the light permeable resin key top by means of a transparent adhesive; and**
- **the film having a thickness of 100 μ m-200 μ m.**

Art Unit: 2875

No prior art was found disclosing individually nor teaching in combination all of the features of the applicants' invention.

Conclusion

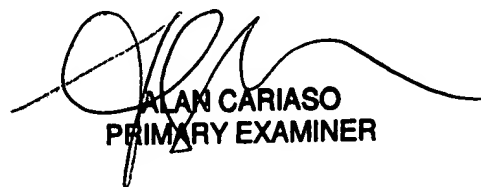
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negrón whose telephone number is (703) 308-6086. The examiner can normally be reached on Monday-Friday from 7:30 A.M. to 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (703) 305-4939. The facsimile machine number for the Art Group is (703)308-7382.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

inr

July 28, 1999


ALAN CARIASO
PRIMARY EXAMINER